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What is claimed is:

1. An external cavity optical transmitter comprising:

a gain chip to emit optical energy, the gain chip including a reflective portion;

an actuator;

a lens coupled to the actuator and configured to receive optical energy emitted by the gain chip;

a grating to receive optical energy emitted by the gain chip and to reflect at least a portion of the optical energy emitted by the gain chip;

a reflector to receive optical energy reflected from the grating, the reflector and the reflective portion of the gain chip forming an optical resonant structure; and

a processing unit coupled to the actuator to position the lens at a location to select a wavelength of operation of the optical resonant structure.

2. An external cavity optical transmitter as defined by claim 1, wherein the actuator comprises a two-axis actuator.

3. An external cavity optical transmitter as defined by claim 2, wherein the actuator comprises a voice coil actuator.

4. An external cavity optical transmitter as defined by claim 1, wherein the lens is movable in planes perpendicular to an optical axis on which the optical energy flows.

5. An external cavity optical transmitter as defined by claim 1, further comprising a detector to provide to the processing unit a representation of a level of optical energy within the optical resonant structure.

6. An external cavity optical transmitter as defined by claim 1, wherein the processing unit comprises a processing unit.

7. An external cavity optical transmitter as defined in claim 1, wherein the processing unit varies the position of the lens to maintain the selected wavelength of operation of the optical resonant structure.

8. An external cavity optical transmitter as defined by claim 1, further comprising an electro-optical crystal disposed within the optical resonant structure to control a phase of optical energy within the optical resonant structure.

9. An external cavity optical transmitter as defined by claim 1, further comprising an etalon disposed within the optical resonant structure, wherein the etalon is configured to receive optical energy within the optical resonant structure and to select a particular wavelength of the optical energy for lasing.

10. An external cavity optical transmitter as defined by claim 1, wherein the optical energy is at a specified International Telecommunications Union frequency/wavelength.

11. An external cavity optical transmitter as defined by claim 1, wherein the optical energy is at one of the C and L bands.

12. A method of tuning an external cavity optical transmitter comprising a gain chip, an external optical cavity, and a lens disposed on an actuator, the method comprising:

causing the gain chip to emit optical energy into the external optical cavity;

setting an operating current of the gain chip to a desired level;

applying a voltage ramp to the actuator on which the lens is disposed to cause the lens to be displaced over a range of positions;

measuring power at a desired wavelength in the external optical cavity; and

setting the actuator to a position yielding maximum power at the desired wavelength of optical energy in the external optical cavity.

13. A method as defined by claim 12, further comprising applying a voltage ramp to an electro-optic crystal to change a phase of optical energy in the external optical cavity.

14. A method as defined by claim 13, wherein applying the voltage ramp to the electro-optic crystal comprises applying a coarse voltage ramp to the electro-optic crystal.

15. A method as defined by claim 13, wherein applying the voltage ramp to the electro-optic crystal comprises applying a fine voltage ramp to the electro-optic crystal.

16. A method as defined by claim 12, wherein applying the voltage ramp to the actuator causes the actuator to displace the lens in a direction substantially perpendicular to an optical axis of the external optical cavity.

17. A method as defined by claim 12, further comprising applying a fine voltage ramp to an electro-optical crystal when the measured power at the desired wavelength in the optical cavity is different than a desired power at the desired wavelength.

18. A method as defined by claim 12, wherein when the lens is displaced over the range of positions, power peaks within the external optical cavity are counted to determine the wavelengths of optical energy within the external optical cavity.

19. An article of manufacture comprising a machine-accessible medium having a plurality of machine accessible instructions that, when executed, causes a machine to:

cause a gain chip to emit optical energy into an external optical cavity;

set an operating current of the gain chip to a desired level;

apply a voltage ramp to an actuator on which a lens is disposed, to cause the lens to be displaced over a range of positions;

measure power at a desired wavelength in the external optical cavity ; and

set the actuator to a position yielding maximum power at the desired wavelength of optical energy in the external optical cavity.

20. A machine-accessible medium as defined by claim 19, wherein the plurality of machine accessible instructions, when executed, cause a machine to apply a voltage ramp to an electro-optic crystal to change a phase of optical energy in the external optical cavity.

21. A machine-accessible medium as defined by claim 19, wherein the plurality of machine accessible instructions, when executed, cause a machine to apply the voltage ramp to the actuator to displace the lens in a direction substantially perpendicular to an optical axis of the external optical cavity.

22. A method of assembling an external cavity optical transmitter, the method comprising:

placing a lens mounted on an actuator on a substrate;

placing a gain chip on the substrate proximate the lens;

optimizing the placement of the lens along an optical axis, based on divergence of optical energy coupled through the lens;

placing a mirror on the substrate to form a resonant cavity between the mirror and the gain chip;

enabling the gain chip to emit optical energy; and

changing a positional setting of the actuator to cause the lens to be translated to a position that yields a desired wavelength of operation.

23. A method as defined by claim 22, wherein changing the positional setting of the actuator comprises sending control signals to the actuator to cause the lens to be displaced in a plane perpendicular to the optical axis.

24. A method as defined by claim 22, further including placing an electro-optical crystal and grating assembly on the substrate.

25. A method as defined by claim 22, further including adjusting a tilt position of the mirror to affect a wavelength of operation.

26. A method as defined by claim 22, further including testing a wavelength of operation at various locations in an operating frequency band.